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NUCLEAR DEVELOPMENT AND PROLIFERATION

No. 137



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8 April 1982

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ARGENTINA TO BUY ENRICHED URANIUM FROM USSR

Sale Confirmed

PY201654 Buenos Aires TELAM in Spanish 1603 GMT 20 Mar 82

[Text] Buenos Aires, 20 Mar (TELAM)--Vice Adm Carlos Castro Madero, chairman of the National Atomic Energy Commission, confirmed today a news report that the Soviet Union would sell enriched uranium to Argentina. Castro Madero confirmed the report during a talk with newsmen at government house at noon today after meeting with President Leopoldo Fortunato Galtieri. He said that he had come to government house in order to report to President Galtieri on the effects the budget cut, ordered by the national executive branch, will have on the Argentine nuclear plan.

More on Deal

PY201826 Buenos Aires NOTICIAS ARGENTINAS in Spanish 1619 GMT 20 Mar 82

[Excerpts] Buenos Aires, 20 Mar (NA)--Carlos Castro Madero, chairman of the National Atomic Energy Commission (CNEA), confirmed today that Argentina will send uranium to the Soviet Union for enrichment to be used at the reactor for radioisotope production, which is located in this capital. Castro Madero explained that the Argentine Government had made this decision because of the position taken by the United States which has refused to continue delivering that material as long as Argentina does not sign the guarantees of nuclear nonproliferation.

When asked about the report published today by the English-language morning paper Buenos Aires HERALD on the Argentine decision to buy enriched uranium from the Soviet Union, Castro Madero said that "it is correct," but he explained that the uranium is sent by Argentina to be enriched in that country.

He explained that "Argentina needs enriched uranium which has so far been delivered by the United States, but because of the nonproliferation act, ratified by that country, there are difficulties in shipping it to Argentina, so we have sought another supplier which is the Soviet Union." He explained that that socialist country "is ready to provide the enrichment services for our uranium so it can be used at our reactor producing radioisotopes."

When asked if this material is suitable for the manufacture of nuclear explosives he categorically denied such a possibility, saying that "it is out of the question, since it is a 20-percent enrichment." Castro Madero stressed that with that rate "It is impossible to make a nuclear explosive."

In conclusion, in reply to another question, he maintained that the position of the Argentine Government is "very clearly that of using nuclear energy exclusively for peaceful ends."

CSO: 5100/2119

UNION GROUPS MAP CALL FOR NUCLEAR TEST BAN IN PACIFIC

Canberra THE AUSTRALIAN in English 8 Feb 82 p 3

[Text]

UNION leaders are organising an international meeting in New Caledonia which will call for the colony to be given independence from France, and will press for a ban on nuclear weapons testing in the Pacific.

The Pacific Trade Union Forum meeting is being planned by the assistant secretary of the ACTU, Mr Bill Richardson, and the Victorian secretary of the Amalgamated Metal Workers and Shipwrights Union, Mr John Halfpenny.

The meeting, to be held within the next two months, is certain to cause tensions in the French colony, which has already denied one union organiser a visa because of his pro-independence views.

The forum's choice of Noumea for its conference, to be attended by union leaders from all major Pacific countries, shows the group's intention to play a major role in Pacific politics.

The forum supports independence and self-determination for the indigenous minor-

ity in New Caledonia.

Mr Halfpenny said yesterday the forum expected no problems in staging the meeting in New Caledonia even though several of the main policies of the body are actively opposed to the French Government.

New Zealand's Federation of Labor, the Japanese SOHYO group and unionists from Fiji, Guam, Hawaii, Kiribati, Palau, Papua New Guinea, the Solomons, Tahiti and Vanuatu are expected to attend.

The formal declarations of the forum indicate its firm commitment to the independence of New Caledonia and to a nuclear-free Pacific.

Boycotts on trade with Australia for its role in producing nuclear fuel, and France because of its weapons testing program, are to be considered.

Mr Halfpenny said the French Government, under President Mitterrand, was "in tune with trade union aspirations".

"Although the French are not committed to independence for New Caledonia they are expressing more sympathy with the needs of the people and are not trying to suppress them," he said.

The forum condemned the shooting of a leading independence movement leader, Mr Pierre Declercq, last September.

Its New Caledonia policy explicitly links independence and the achievement of a nuclear-free Pacific goal.

"The nuclear-free Pacific will not be achieved without freedom from colonial superpowers," the policy says.

"The assassination of Pierre Declercq has highlighted the growing demand for independence from France for the peoples of New Caledonia."

The forum has also determined "not to stand aside while our brothers and sisters in New Caledonia struggle for their political and social independence."

The refusal of France to relinquish its control is considered by the forum to represent a "threat to the peace, stability and security of the Pacific region".

The involvement of Australian leaders from a broad spectrum of trade unions indicates the growth of international union links in the Pacific region, one of the main intentions of the forum.

COUNTRY POISED TO EXPORT 43,000 TONS OF YELLOWCAKE

Canberra THE AUSTRALIAN in English 2 Feb 82 p 9

[Article by Wio Joustra]

[Text]

DESPITE all the problems and controversy surrounding it, and over-supply on the world market, Australia's uranium export industry is already worth \$4000 million.

The Australian industry has concluded contracts for the export of almost 43,000 tonnes of yellowcake.

Government and industry leaders believe the surface of the market has barely been scratched, and that the latter half of this decade will see a world-wide upsurge in the use of atomic power.

When the Federal Government gave the green light to the production and export of uranium ore after the Fox inquiry in 1977, a list was drawn up of potential importers.

The Government has now concluded nuclear safeguards agreements with 17 of the 18 countries on the list.

The agreement with Euratom, the nuclear development and control organisation of the EEC, covers its 10 member States and is binding on future members such as Spain and Portugal.

The other agreements are with the US, Canada, Sweden, Finland, Switzerland, Korea and the Philippines.

Australia and Japan have yet to ratify their agreement.

These countries, many with nuclear power programs under way, were acceptable to Canberra as signatories of the Nuclear Non-Proliferation Treaty.

The Government made it clear from the start that the conditions attached to the use of Australian yellowcake would be the toughest in the world.

Not only do importing nations have to be signatories to the treaty and fulfil the safeguard conditions laid down by the International Atomic Energy Agency, if they want Australian uranium they also have to:

- Undertake that it will not be used for any explosive or military purpose;
- Take appropriate physical security measures; and
- Obtain Australian consent before it may be transferred to other countries, enriched beyond a 20 per cent U235 level or reprocessed.

The agreements provide for regular bilateral consultations on the implementation of the conditions.

In case of a breach, Australia can suspend or stop supply and require the return of nuclear material already supplied.

The conditions are mainly designed to give a watertight guarantee that Australian yellowcake is not used for purposes other than peaceful.

The "prior consent" clause in particular has been a hard pill

to swallow for some countries.

Japan saw prior approval to reprocessing as undue interference in its ambitious atomic power program.

CAPACITY

According to figures prepared by the Australian Atomic Energy Commission, the countries with which Australia has concluded agreements possess a total of 398 nuclear reactors, with a total generating capacity of 330,000 megawatts.

These include power stations already operating, under construction and on order.

Almost half the number (165, with a 156,000MW capacity) are included in the US atomic power program.

The US is still by far the world's largest yellowcake producer, with reasonably assured resources of 605,000 tonnes against Australia's 317,000, and estimated additional resources of more than a million tonnes (Australia 285,000).

Other major uranium producers are Canada, South Africa, Namibia and Niger.

Since 1977 there have been

just over 100 shipments of uranium concentrate from Australia, totalling 6000 tonnes, to Finland, Japan, West Germany and the US.

The uranium came from the Mary Kathleen mine in Queensland and Nabarlek in the Northern Territory.

Most of these exports were approved before 1972, when the Whitlam Government stopped Australia's uranium industry and commissioned the Fox inquiry.

Contracts on paper now for the sale of 43,000 tonnes from the Ranger and Nabarlek mines have been concluded by Peko-EZ, Queensland Mines, and Energy Resources of Australia to the US, Finland, Korea, West Germany, Japan, France, Belgium and Sweden.

Most of these are for 1982 to 1998.

The largest contract concluded so far is for the supply of 12,168 tonnes of U308 (yellowcake) to the Japan-Australia Uranium Resources Development Co by Energy Resources of Australia.

AUSTRALIA, SWITZERLAND AGREE IN NUCLEAR FUEL DISCUSSIONS

Canberra THE AUSTRALIAN in English 4 Feb 82 p 4

[Article by Nicholas Rothwell]

[text]

AUSTRALIA and Switzerland are about to sign a nuclear fuel supply agreement after confidential talks in Canberra last month.

A special delegation from the Swiss Energy Office came to Australia for the talks, which have paved the way for an agreement to be signed soon.

Initial talks established a tentative agreement under which Australia can supply uranium to Swiss nuclear power plants and Switzerland may provide nuclear technology and equipment exports.

The final agreements will be negotiated and signed by senior officials before ratification by both Governments.

The negotiations between the two countries have not been made public.

Swiss diplomats and officials from the office of the Minister for Trade and Resources, Mr Anthony, confirmed yesterday the text of an agreement had been drafted and authorities in Bern and Canberra were studying it.

"A lot of progress has been made on this government-to-government

agreement, which will provide the framework for commercial transactions," a Department of Trade and Resources spokesman said.

Under the agreement, Australian mining companies will be able to sell uranium to Swiss power utilities, while other firms will be allowed to import Swiss technology.

These imports could include equipment for use in Australia's proposed uranium enrichment plant, the spokesman said.

The Australian Government has not been advised if local uranium development companies intend to sell nuclear fuels to Swiss utilities.

Switzerland has four nuclear power plants with a combined generating capacity of 3000MW. Swiss firms are experienced in enrichment technology.

The draft agreement will further boost Australia's role as a supplier of nuclear fuels to the European market and may strengthen links between the European and local nuclear industries at a crucial stage in selecting a foreign supplier for Australia's first uranium enrichment plant.

BEVERLEY URANIUM MINE SEEN AS RADIOACTIVITY POLLUTANT

Canberra THE AUSTRALIAN in English 4 Feb 82 p 15

[Article by Ross Peake]

[Next]

THE fate of the Moonie Oil Co Ltd grab for control of the boards of Olinian NL and Petromin NL still hangs in the balance, despite annual meetings of both companies yesterday.

The outcome of ballots taken on votes to put Moonie Oil representatives on the boards of two Queensland-based companies was not known until February 17.

Olinian's meeting was also highlighted by a failed attempt by anti-uranium protesters to stop the company continuing to develop its uranium deposits at Beverley, in South Australia.

Moonie oil representative, Mr Leo Williams, is challenging an Olinian board member, Mr L. W. Doggett, and Moonie chair, Mr Julian Beale, is trying to unseat Mr T. J. Gurr at Petromin.

At the February 17 meeting, the only business will be the declaration of the poll.

Moonie holds 23.29 per cent of Olinian and just under 10 per cent of Petromin.

Moonie operations manager, Mr Peter Allan, who was previously appointed to the Olinian board, was re-elected yesterday without opposition.

Should Moonie get the second board seat at Olinian it

would give the group effective control.

Olinian and sister companies, Petromin and Transoil, with an American partner, Philes Dodge Corp, own the uranium mine.

The Olinian-Transoil-Petromin group has made shares in about 200 million tonnes of coal to be mined in Queensland about 60 million barrels of oil at Merrepen in the Northern Territory and the 16 million kg of uranium oxide at Beverley.

A spokesman for the Campaign Against Nuclear Power, Mr Owen Pearson, said the underground and-leaching method proposed for mining the Beverley deposit had never been used in Australia.

He said the method had been banned in some parts of the US because of the danger of polluting the artesian water-supply with radioactivity.

He said the Beverley mine would operate under a new Australian code of practice on radiation protection which allowed exposures to radiation far higher than was allowed in America.

Mr Pearson said the recent safeguards deal with Japan had watered down previous agreements and would allow reprocessing, transfer to other countries, and enrichment to bomb strength.

DATE FOR MARY KATHLEEN URANIUM MINE CLOSURE NOW SET

Sydney THE SYDNEY MORNING HERALD in English 6 Feb 82 p 2

[Article by Michael Lawrence]

[Text]

The Mary Kathleen uranium mine in north-west Queensland will be closed this year when all the commercially viable yellowcake has been mined and existing contracts filled.

The mine's directors announced yesterday: "It is anticipated that the contracted tonnage of uranium 308 will have been mined by the end of September, 1982, and the mine will then close.

"In these circumstances, the treatment plant should cease operation by the end of December."

Some uranium will be stockpiled to meet deliveries which extend into 1984.

A redundancy plan has been formed, and agreement reached with the mine's 500-odd employees and the unions.

The company is working with the Queensland Government on a program to restore the site to its natural state.

The closure move is not entirely unexpected, although it will be earlier than first thought. In his address to the 1981 annual general meeting, MKU's chairman, Mr J. L. Liebelt, foreshadowed the mine would close at the end of 1983.

At that time, Mr Liebelt outlined an expanded exploration program to see if any commercial pockets of uranium existed on the Mary Kathleen lease or surrounding permits.

The recovery of any remaining uranium would depend on the market situation and other commercial factors, Mr Liebelt said.

The directors have now decided that any uranium left unmined, and the low grade stockpiles remaining after the closure, will not be worth selling.

Mining at Mary Kathleen, which is about 50km east of Mount Isa, began in 1956. It continued uninterrupted until 1963, when a world-wide slump in uranium demand led to closure of the mine.

It was reopened in 1976 when new contracts were negotiated.

CSO: 5100/7515

HYPOCRISY SEEN IN INDIA'S CONCERNS ABOUT PAKISTAN'S NUCLEAR POLICY

Karachi JANG in Urdu 21 Feb 82 p 3

[Editorial: "Look at Yourself"]

[Text] The new director general of the International Atomic Energy Agency [IAEA] Mr Hans Blix, said that they had no proof that the nuclear fuel acquired by Pakistan for peaceful purposes was being used for military purposes. The present head of AEA, which is controlled by the United Nations, took office last December. Formerly, he was the foreign minister of Sweden. During an interview at IAEA's headquarters in Vienna, he said that the agency was greatly concerned about the intentions and activities of India, South Africa and Israel regarding their procurement of nuclear weapons. During the interview, Mr Hans Blix supported the nuclear policy of the U.S. President, Mr Reagan, and said that if the doubts and suspicions of various countries about their security were alleviated, they would neither manufacture nor try to obtain nuclear weapons. In this connection, Mr Blix strongly supported the American decision to provide \$3.2 billion in aid, military equipment and F-16 planes to Pakistan. He said that establishing trust concerning the security of a country like Pakistan was a step of great wisdom. He said that anxiety over its security played a decisive role in a country's affairs. If a country considered itself safe, it would also cooperate with IAEA, but the countries that regarded themselves as insecure would try to acquire nuclear weapons. However, Mr Blix also said that in spite of all the restrictions, many countries would soon obtain nuclear weapons and IAEA could not stop them.

After many years, this is the first voice heard among the noise and clamor of the anti-Islamic communication media and anti-Pakistan, Western Zionist supporters of Israel that has not attacked Pakistan's nuclear policy intentions and preparations. Instead, in view of its national integrity, declaring Pakistan's concern as legitimate, it has commended America's efforts to provide military and economic aid. Strangely though, along with the interview of Mr Blix, the newspapers have also published the news that the Indian defense minister has expressed great concern over the information that Pakistan is allegedly manufacturing an atomic bomb. Addressing parliament, the Indian defense minister, Venkataraman, said that he had expressed his concern after reading news based on information provided by the U.S. intelligence agency, CIA, published in the NEW YORK TIMES. He accused Pakistan of stockpiling nuclear fuel to construct an atomic bomb. He also declared that India had raised that issue at the

highest level with the Government of Pakistan. Besides, the Indian minister external affairs, Narasimha Rao, made a similar statement in Rajya Sabha, the upper house of the Parliament, against Pakistan's nuclear program. There is no need to give lengthy comments on the interview and statements, since their contradictions are self-revealing. Based on the information provided by the CIA in the NEW YORK TIMES, the Indian leaders are accusing Pakistan of preparing to manufacture nuclear weapons and of accumulating nuclear fuel for this purpose. On the other hand, the new director general of the UN's IAEA has said that Pakistan's nuclear preparations are for peaceful purposes and the Agency has no evidence to prove that Pakistan is piling up nuclear fuel for nonpeaceful or military purposes. However, he did say that the intentions and nuclear activities of India, South Africa and Israel are of great concern to IAEA. We humbly ask the Indian leadership, particularly the ministers of defense and external affairs to prove their own innocence to the world before expressing concern about India should establish that its intentions are no threat to the integrity of its neighbors and world peace. The IAEA has itself provided testimony to Pakistan's innocence. Therefore, it has no need for any clarification. Nevertheless, India has been included in the category of Israel and South Africa. India indeed should be ashamed of this.

9779

CSO: 5100/5626

PAKISTAN

BRIEFS

NUCLEAR ARMS REPORT DENIED--New Delhi, March 14--Pakistan Ambassador Abdul Sattar said on Sunday that Pakistan had neither the intention or the resources to produce nuclear weapons, the Press Trust of India (PTI) reported. Mr Sattar, who was speaking at a seminar in the southern Indian city of Bangalore, referred to widespread Press reports that Pakistan was following a nuclear arms programme. "We have neither the intention nor the resources to do so. This is speculation and propaganda carried by countries which possess the most destructive arsenal in the world," he said. [Text] [Karachi DAWN in English 15 Mar 82 p 11]

CSO: 5100/5634

BRIEFS

NUCLEAR REACTOR GOES INTO OPERATION--Without any problem, Brazil entered the nuclear era yesterday at 2023 when the Angra 1 nuclear reactor started to operate as a result of nuclear fission and of the chain reaction of neutrons with uranium 235 atoms. The operation of the nuclear reactor did not disrupt, however, the peace of the 70,000 people who live in Angra dos Reis, located at approximately 30 km from the plant. The operation occurred 5 years behind schedule. Angra 1 had been baptized 10 years ago as Adm Alvaro Alberto Plant. Preparations for its going into operation started in September last year with the filling of the reactor nucleus with fuel elements. It was the same expert who did that work--U.S. citizen John Wayne Linnard, of Westinghouse--who had the mission of putting the first Brazilian nuclear plant into operation. [Text] [PY151045 Rio de Janeiro JORNAL DO BRASIL in Portuguese 14 Mar 82 p 1]

CSO: 5100/2115

SCIENTISTS SAY N-REACTOR COULD PRODUCE BOMB

NC181536 Paris AFP in English 1527 GMT 18 Mar 82

[Text] Paris, 18 Mar (AFP) -- Iraq's projected new "Osirak" nuclear reactor could be used to produce nuclear weapons, French scientists said here recently in a report sent to President Francois Mitterrand.

The Osirak reactor was destroyed in June last year when Israeli Air Force bombers attacked the Iraqi nuclear research center in Tammuz. France has offered to help Iraq rebuild the reactor on condition that Osirak be used for exclusively peaceful purposes.

But in a study carried out following a request by the French Government, five top-ranking French scientists concluded that the Osirak nuclear research reactor could in fact produce plutonium, needed to make the bomb.

In an attempt to ensure that Osirak operations could not be diverted into the production of military weaponry, France initially offered to supply Osirak with "caramel" fuel instead of enriched plutonium. Caramel is made up of uranium oxide enriched with a low quantity of Uranium 235. Unlike the highly enriched uranium (95 per cent of uranium 235) used to produce nuclear bombs and which often serves to fuel nuclear reactors, caramel cannot be converted into N-bomb capacity plutonium.

According to the terms of the initial Franco-Iraqi Osirak contract, Paris agreed to supply caramel in doses of only 13 kgs (28.6 lbs) at a time. These tiny quantities guaranteed France against Iraq diverting the fuel to military use as any diversion would have halted Osirak's continuing operation.

But the French report, prepared by National Centre for Scientific Research workers Georges Amsel and Raymond Sene, and by three other Academy of Sciences members, stressed that though the fuel problem had been resolved, Iraq was nevertheless capable of producing plutonium.

The water-cooled Osirak-type research reactor was one of the most powerful in the world, they said. As such, any matter undergoing irradiation in the test reactor could be replaced by natural uranium in order to obtain plutonium for the bomb.

A U.S. congressional committee has already concluded that international controls for "this type of reactor" are "ineffective," they said.

Osirak had a yearly plutonium production capacity of 3.3 to 10 kgs (6.6 to 22 lbs), the scientists said, pointing out that only 6 kgs (13.2 lbs) of plutonium were needed to produce the N-bomb.

The Soviet Union, Syria, the United States and Saudi Arabia had all expressed concern over the risks involved, which should not be taken lightly, they said.

ISRAEL

BRIEFS

NUCLEAR POWER STATION NEGOTIATIONS--Tel Aviv, 11 Mar--Energy Minister Yitzhaq Berman said this evening that Israel has for some months now been conducting negotiations with several countries for the establishment of a nuclear power station in Israel. In a speech on Israel's energy policy delivered in English at the Tel Aviv Zionist Organization of America house, Mr Berman pointed out that those who have recently said that Israel is conducting negotiations on this with only one country are wrong. The minister added that Israel will produce its electricity from coal. In 3 years, electricity generated from coal will account for 40 percent of the overall production, whereas in 6 years all power stations will be run on coal. Referring to Minister Ya'akov Meridor's invention, he said that the details will only become known on 15 March. [Text] [TA112111 Tel Aviv ITIM in Hebrew 2030 GMT 11 Mar 82]

CSO: 5100/4708

BRIEFS

NUCLEAR REACTOR FOR NEW UNIVERSITY--Engineer Ra'if Nijm, the director of the Al-Yarmuk University project stated that the plan for the main location of the university will include designation of a site for setting up a nuclear reactor. In an interview published by the magazine AL-MUHANDIS AL-URDUNI, he said that the plan will include two locations. The first will cover four faculties: the school of engineering, the school of sciences and medical science, the school of liberal arts and the school of agriculture and veterinary medicine. There will be a total of 35 departments. The second section will be called the Center for Social Affairs and will include a cultural center, a museum, a hotel, a computer and facilities for other activities. [Text] [Amman AL-DUSTUR in Arabic 11 Mar 82 p 5]

CSO: 5100/4711

NUCLEAR POWER PLANS OUTLINED

London JAMAHIRIYAH REVIEW in English No 22, Mar 82 p 17

[Article by Robin Miller]

[Text]

THE LIBYAN Jamahiriya is committed to the exploitation of nuclear energy for peaceful purposes, and by the year 2000 plans to have four major nuclear power stations in operation. A small research reactor has already been set up at Tajoura, near Tripoli, and a contract for the construction of the first power station is expected to be signed soon. Libya's determination to succeed in the nuclear energy field was underlined at the January 1981 meeting of the General People's Congress, the country's legislature, when it was resolved to establish a full Secretariat for Nuclear Energy.

The Jamahiriya looks to atomic power as the cheapest way of meeting its future electricity needs. At present, nuclear energy is about 20 per cent more expensive per megawatt than conventional energy. Technological advances, however, are expected to bring costs down sharply. Further, in forty years the oil reserves of many major producers will be nearing exhaustion. Oil prices are certain to rise in response to dwindling world supplies, giving nuclear energy an even sharper competitive edge. A single tonne of uranium used in a standard reactor produces the same power as 7,000 tonnes of oil. In a fast breeder reactor of the type Libya plans, one tonne of uranium is the equivalent of 60,000 of oil.

The Libyan Jamahiriya now consumes about 3,800 MW of electricity. This is expected to rise to 4,500 MW by 1985 and about 5,000 MW by 1990. Libya's electricity needs in 1995 are projected at about 6,000 MW, of which 1,200 MW — about 20 per cent — will be supplied by

four nuclear power stations. A contract will shortly be signed with the Soviet Union's Atomenergosexport for the construction of the first, a 440 MW pressurised water reactor to be built on the coast of the Gulf of Sirte. French, West German and Yugoslav firms are reportedly bidding for the civil engineering works and instrumentation systems. The station should be operational by 1986. The three other nuclear power stations are under study, but all should be operational by the year 2000. The Jamahiriya's four nuclear plants will have two main purposes — to provide power for heavy industry, and heat for sea water desalination plants.

Libya is developing its nuclear energy programme in concert with other Arab countries. Iraq, Syria and the Jamahiriya have each put forward draft proposals for the establishment of a pan-Arab nuclear energy agency, and these have been studied by a committee of Arab scientists. The committee's report sets out options for an integrated Arab nuclear energy strategy, and proposes a pan-Arab nuclear energy agency to co-ordinate policies in all the Arab countries. The agency, with a proposed \$6 billion capital, would have an executive committee of scientists, and a conference representing all the Arab countries. The new body would co-operate closely with the existing International Atomic Energy Agency (IAEA), based in Vienna, which monitors nuclear energy developments throughout the world, and of which all the Arab countries are members.

The Libyan Jamahiriya is frequently accused by the western media of harbour

ing plans to acquire nuclear weapons, despite the equally frequent and consistent denials of any such intention by Muammer Qadhafi and other Libyan officials. The Jamahiriya's commitment to the use of nuclear energy for peaceful purposes only was reaffirmed as recently as February by the country's Atomic Energy Secretary Abdel Majid Gaoud, in an interview with the London weekly *The Middle East*. He pointed out that if Libya had wanted nuclear weapons, it would have been much cheaper, and technically simpler, to opt for a specifically military nuclear programme. No Arab country, he said, had taken such a course. Israel, said Mr Gaoud, was the only country in the world that had explicitly embarked on a nuclear weapons programme unrelated to any civilian applications. 'That is why you do not find any nuclear power station in Israel,' he explained.

Libyans believe that the international media campaign to discredit the country's nuclear plans is motivated in part by the industrialised states' desire to maintain their monopoly of sophisticated technology. Addressing students in Tripoli on

10th February, Libyan leader Muammer Qadhafi insisted that nuclear technology should be freely available to all countries. 'Knowledge is the natural right of man,' he declared. 'It should not be limited to one group and denied to another, as happens in this atomic age, when certain countries are allowed nuclear know-how while it is denied to others.'

Plutonium, a key component of nuclear warheads, is produced more rapidly in fast breeder reactors than in other types, but Atomic Energy Secretary Abdel Majid Gaoud told *The Middle East* that the Jamahiriya had chosen fast breeder reactors simply because they offered the most efficient way to use nuclear fuel. In any event, he said, Libya, like all the Arab countries, had signed the nuclear non-proliferation treaty, and all were members of the IAEA, whose inspectors regularly monitor installations to ensure that plutonium is not being diverted for military use. Israel has refused to sign the non-proliferation treaty, and has never allowed IAEA personnel to inspect its secret nuclear establishment at Dimona, in the Negev desert.

CSO: 5100/5005

BRIEFS

URANIUM PRODUCTION--Rabat, 18 Mar (MAP)--In the very near future, Morocco will be a uranium-producing country, reports the Moroccan paper MOROC-SOIR on Wednesday. The first uranium production unit will be operational in Safi in 1984, the daily points out, adding that this unit, once operational, will produce 200 tons of uranium annually. MOROC-SOIR also points out that when all the units producing phosphoric acid at Safi are working at full capacity, they will produce 600 tons of uranium annually. With the building of Maroc-Phosphore III and IV--the foundation of which was laid by King Hassan II--and the establishment of phosphoric acid units, the Jorf Lasfar complex (El Jadida) will be able to supply in its turn 600 tons of uranium annually. Thus, Morocco will be producing 1,200 tons of uranium annually, the paper concludes. [Rabat MAP in French 1800 GMT 18 Mar 82 LL]

CSO: 5100/2119

NIGER

BRIEFS

URANIUM PRODUCTION--The ambassador of Niger to the United Nations, Ide Oumarou, stated during a recent lecture before the French-Speaking Cultural Association of the United Nations: "Niger will reportedly be in 1990, according to a very recent estimate, the leading African producer of uranium and the fourth ranking world producer." He called to mind the fact that in 1978 Niger was in the sixth rank of uranium producers, behind the United States, Canada, South Africa, Namibia and France and had outstripped France in 1979 with a production of 3,500 tons. According to the Uranium Institute of London, Niger will reportedly have a potential uranium production of 8,000 to 11,000 tons in 1990. [Excerpt] [Niamey J.E SAHEL in French 11 Mar 82 pp 1, 3]

CSO: 5100/5632

REASONS FOR HESITANCE IN SIGNING NUCLEAR TREATY

South Africa Pressured

Johannesburg DIE VADERLAND in Afrikaans 22 Feb 82 p 11

[Article by Dries van Heerden: "Pressure on South Africa To Sign Nuclear Treaty"]

[Text] This week Foreign Minister Pik Botha said that the possibility that South Africa will sign the International Nuclear Non-proliferation Treaty is being studied.

Lately the voices of several experts have been raised urging the government to sign the treaty. The republic is one of just a few countries in the world which have not yet done so.

Among the countries which, like South Africa, have not yet subscribed to the treaty are: France and China, both of them nuclear powers, as well as Argentina, Brazil, Cuba, India, Portugal, Spain, Tanzania and Zambia.

Much thought is being given with regard to the advantages or disadvantages of South Africa's signing of the treaty. Up until last week the government's official point of view was still not in favor of signing this treaty.

Those in favor of the treaty are pointing to the fact that signing it would improve South Africa's image abroad. This would put an end to the growing international suspicion that the republic possesses nuclear weapons.

Opponents are saying that we must be careful, because the treaty stipulations, to the effect that the International Nuclear Energy Agency can conduct inspections, could be harmful to South Africa.

The reasoning is that there is the danger that the republic's unique uranium enrichment process, which now is still secret, will be compromised through such actions.

Moreover, history has shown that the treaty has not really succeeded in its purpose, namely that of preventing the spread of nuclear technology which can be employed in the production of nuclear weapons.

Since the drafting of the treaty it is presumed that at least six countries have started to produce nuclear weapons. Of these, five have not signed the treaty (Algeria, Brazil, Israel and Pakistan) while one of these countries (Australia) did sign it.

In its present form the Nuclear Non-proliferation Treaty was approved by the United Nations General Assembly on 17 June 1968. South Africa was one of the 11 countries which voted in favor of the treaty.

The preamble of the treaty refers to the "devastation which would be caused throughout the world by a nuclear war and to the consequent necessity of preventing such a war and of taking measures for guaranteeing the security of all peoples."

The most important stipulations of the treaty are:

1. All existing nuclear powers promise not to provide nuclear weapons, either directly or indirectly to any non-nuclear powers or to pass on to them any technology which would enable these countries to manufacture nuclear weapons.

2. All nuclear powers using nuclear energy for peaceful purposes promise to open their nuclear installation for inspection by the International Nuclear Energy Agency.

3. The treaty is not intended to put any stumbling blocks in the way of peaceful application of nuclear energy. Signatories of the treaty have the right to exchange such technology.

4. Nations promise to negotiate among themselves regarding measures for putting an end to the nuclear armaments race and to reduce the nuclear arsenal of nations until a complete nuclear disarmament has been achieved.

Although South Africa has not signed the treaty it is yet a full member of the International Nuclear Energy Agency and up to and including 1977 the republic also acted as one of the directors of the agency.

Since 1968 political pressure has been applied on South Africa to sign the treaty. In 1970 the even greater consideration was given to the fact that the entire continent of Africa was declared as a "nuclear weapon free area" by the United Nations.

As a result of the UN resolution of 1966 no nuclear weapon or ballistic missile may be fired or tested on the continent and the storage or transportation of such weapons is also forbidden.

At the time this resolution was subscribed to by the Organization of Africa (O.A.U.) it also undertook to resolve that no country on the continent shall develop or use a nuclear weapon.

South Africa's Diplomacy Trump

Johannesburg DIE VADERLAND in Afrikaans 22 Feb 82 p 10

[Editorial: "South Africa's Nuclear Trump"]

[Text] It is no secret that the outside world (and very likely the more sympathetic U.S. administration) is continuously applying pressure on South Africa to sign the International Nuclear Non-proliferation Treaty.

Indeed Foreign Minister Pik Botha admitted in Parliament that "from time to time" inquiries are being made by Western governments.

The fact that such pressure is also being exercised at home is attested by the very question about this matter directed at Mr Botha in Parliament.

But also the fact that the minister will not allow himself to be cornered by this question and that it is sufficient for him to say that the matter is "being considered" is understandable. Yet this reply is more positive than last year's stark refusal to the same question.

South Africa's signing or not signing of the 1968 treaty is a matter deserving very sober and very thorough consideration. Most assuredly we should also take into account the fact that the United States will not always have a sympathetic Reagan Administration.

But there are also other reasons why South Africa should be careful.

First of all there is as yet no effective international inspection agency which can monitor the nuclear installations of the signatory countries. The nuclear powers themselves reject such monitoring.

Even if there were an effective agency, South Africa could not be very pleased with the possibility that its secret uranium enrichment process could be ferreted out.

We must also take into account the Russian threat and the fact that neighboring countries such as Zambia, Tanzania and probably Zimbabwe do not want to sign the agreement.

Once we sign the treaty our hands will be tied no matter what happens in the future.

South Africa sticks to its stand that it is developing nuclear power for peaceful objectives. Besides, if we were to join the nuclear [weapons] league, we would be having a weapon which we could hardly employ even for the reason that the world would know that we have it. That too would be binding our hands.

However, by keeping our options, we will continue to have an important diplomatic trump in our hands. It will force those who would like to push us too far to be cautious.

7964

CSO: 4701/39

JAPANESE PURCHASE OF BEISA URANIUM

Johannesburg RAND DAILY MAIL in English 6 Mar 82 p 7

[Article by John Mulcahy]

[Text]

A SIGNIFICANT proportion of the R220-million Beisa mine's uranium production has been committed to Japanese customers, says the chairman, Mr Ted Pavitt.

He told guests at the official opening of the mine near Welkom yesterday that the large base load of offtake by the Japanese customers had provided the financial underpinning "so vital in a pioneer venture of this nature".

The General Mining Union Corporation group mine is South Africa's first primary uranium producer, with gold as by-product, and will employ 5 000 people when in full production.

Mr Pavitt said that before embarking on the Beisa project, Gencor realised that it needed commercial expertise to complement its technical knowledge, and the Japanese proved to be the ideal partners.

Beisa, which last year became a division of St Helena Gold Mines, started production in December, and is expected to reach full output of 100 000 tons of ore a month by June this year.

Uranium grades now are about 0.6 kg/t, and gold values are about 0.55 g/t, but are expected to improve to 1.5 g/t.

Mr Pavitt said that characteristic of the Free State Goldfields — underground water — was proving troublesome, and 10-million litres were being pumped out of the mine every day.

However, that the volume of water underground was finite, and pumping would continue until the problem was solved.

Shaft sinking at Beisa started in October 1978 and, No 1 Shaft was completed in September last year. By the end of February this year 14 400 metres had been developed, of which 2 880 metres were on reef.

At the planned production rate of 1 200 000 tons a year Beisa's life was estimated at 26 years.

Although exploration in the Beisa area had been undertaken since the 1930s, it was not until 1967 when gold was again sold at free-market prices that Union Corporation returned to the known reefs south of the Sand River, said Mr Pavitt.

Although gold values remained as elusive as ever, the energy crisis in the early

1970s highlighted uranium, and after six years of study an economic deposit was delineated, primarily uranium-bearing, but with gold as a valuable by-product.

Beisa was the first mine to employ the carbon-in-pulp (CIP) process exclusively, although a number of producers had pilot plants.

The advantages of the CIP method of gold extraction were the lower capital investment costs, with savings of about 50%, operating costs were up to 70% lower than conventional gold extraction plants and there was the possibility of higher recovery efficiencies.

Highlighting the substantial inflationary increase in the cost of establishing a mine, Mr Pavitt said that Kinross, completed in the 1960s, cost a total of R30-million, and the new Beatrix mine in the Free State would cost R500-million to complete.

Gencor had infinite faith in the metals it produced, and realised the present gold slump was temporary.

On the day Unisel was opened in January 1980 gold reached its peak of \$850, and the drop to \$340 yesterday would still not shake this confidence, he said.

NUCLEAR WASTE STORAGE PROBLEMS STILL UNSOLVED

Vienna PROFIL in German 1 Feb 82 pp 15, 16

[Article by Josef Votzi: "Wait and You Will Get Bad Advice"]

[Excerpts] The demand for "safe final storage" is probably incompatible with the startup of Zwentendorf: No one in the entire world knows definitely where nuclear waste should be permanently stored.

Since Bruno Kreisky ordered the SPÖe [Socialist Party of Austria] to steer the lone course of a nuclear election campaign, provincial socialists have pulled the emergency brake. Salzburg party chief Herbert Moritz, Upper Austria's Rupert Hartl and Graz Socialist Party chairman Alfred Stingl demand the very same thing in different words: "Before political decisions can be made about the question of the nuclear non-proliferation treaty and a new popular referendum, the open questions about final storage of nuclear waste must be clarified (Stingl).

Kreisky himself also added a stereotype stinger to nearly every one of his numerous pro-Zwentendorf statements: "The people themselves have the right to demand from us that we give them an answer to the question of final storage." After all, the chancellor knows that in all the polls the diverse nuclear skepticism of the Austrians is dominated by the nuclear waste problem. Even 66 percent of those who voted yes, according to Karl Blecha's analysis of the popular referendum, are of the opinion "that Zwentendorf cannot be put into operation as long as final storage of the nuclear waste has not been truly solved."

In the whole world this question has not yet been truly solved. Even before the referendum the nuclear advocates worked with the principle of hope. "One year's waste from Zwentendorf capable of being permanently stored has a volume of only 2 m³," wrote the Association of Electricity Works in its glossy brochure sent to all households. "We know how it's done, but we need a final storage site in 1990 at the earliest for very small amounts. Then one can afford to wait for additional technical progress, just as all other countries are doing." Ever since nuclear technology began, one has argued all over the world according to this contradictory motto: We know how to do it, but we are waiting for technical progress.

What scientific superstition exists behind this faith--described as crazy by nuclear opponents--in luck was pregnantly formulated by the Briton Sir John Hill, an unsuspecting witness, who for years has been president of the English nuclear energy authority: "We landed in a trap which we set for ourselves, and we must decide what answer we want to give to this challenge--although everyone who works with the problem of waste removal knows that in a practical sense there can be no answer for many years to come." And: "I believe that in order to satisfy our critics we must establish a waste disposal method regardless of whether or not it is the most satisfactory and economically best method." [Quote from NEW SCIENTIST, 5 August 1976.]

How unsatisfactory the present practice is was recently described by SPD Bundestag delegate Harald Schaefer, chairman of an important parliamentary committee: Since the "disposal of radioactive waste has not been realized in practice anywhere, not even in the FRG," the "new construction of nuclear power plants is not justifiable at this time for reasons of disposal policy." The chairman of the board of directors of the Rhine-Westphalian Electricity Works put it even more drastically: "The danger exists that we may have to shut down."

On paper, waste disposal has long been solved. Purely technically, it takes place like this: Once a year one-third of the fuel elements in the reactor must be exchanged. The spent fuel rods are highly radioactive and produce so much heat because of the lasting process of nuclear decay that they must first be placed in the power plant's own cooling basins for half a year. This interim storage, constructed in the form of a closed swimming pool, cools the fuel elements to where they can be transported. Packed in lead containers they arrive at the reprocessing facility--in the case of Austria at La Hague in France.

There one separates that which causes the greatest concern all over the world: In a complicated chemical process uranium and plutonium are extracted for reuse, and the remaining fission products, the radioactive "nuclear waste," are left over.

Austria has already gone through a great deal concerning potential waste disposal domestically or abroad.

After Bruno Kreisky had allowed nuclear waste to jet back and forth between Iran, Egypt and Alberndorf in Lower Austria, SPÖ energy spokesman Kurt Heindl brought back a full tank of optimism from a nuclear waste sightseeing trip last Friday. Heindl and eight parliamentary colleagues from the nuclear sub-committee viewed everything sold by the French nuclear industry as a solution to the problem of nuclear waste: the reprocessing facility at La Hague and the vitrification plant in Marcoule.

"I have confirmed my opinion," the red energy spokesman reported, "that final storage is no problem at all." There is only one reason why not a single model exists in the entire world: "That is for purely economic reasons; final storage is not even of interest at the moment."

Although in 1978 it was written into the nuclear energy report as a "conditio sine qua non" and repeatedly demanded by party colleagues that it must be solved beforehand, Kurt Heindl wishes that Austria would be spiritually affiliated with France: "Rarely have I seen a nation deal in so relaxed a manner with nuclear energy and center its life around it."

11949

CSO: 5100/2102

RESEARCH MINISTER SEEKS FUNDING TO COMPLETE FAST BREEDER

Hamburg DER SPIEGEL in German 22 Feb 82 pp 59, 61, 63

[Text] Research minister von Buelow thinks that the fast breeder at Kalkar can be brought to completion. But by no means is he sure yet of getting the financing contribution from the electricity industry.

With self-confidence the research minister presented the outcome of a year's tough haggling on Wednesday of last week: According to Andreas von Buelow in the cabinet, he had wrung a billion marks out of the electricity concerns, and thus the research reactor in Kalkar could be completed.

And yet within the circle of the cabinet doubt was already being expressed about whether this money would be enough after all. At the concluding of the contract, the reactor was supposed to have cost 1.7 billion marks, but now a total of 5 billion is allowed for.

The chancellor asked his finance minister. But Hans Matthoefer remained vague: "I cannot let myself be tied down to anything." This caution is justified. "Cost estimates for research projects," as Matthoefer had learned when he was von Buelow's predecessor in the research office, "must be multiplied by pi."

In fact von Buelow is taking a great risk if he relies on the promises of industry and commits himself to 5 billion marks for the costs. Even now it is as good as certain that by the time of the handing over of the reactor in 4 years he must be prepared for considerable extra charges.

The total costs of 5 billion marks for the once highly praised breeder were last determined at the end of 1980. The reckoners have allowed for a price rise of only 6 percent annually up to the time of initial startup in 1986--which is much too small based on experiences of the past and compared to the price jumps for comparable large-scale undertakings.

Moreover, this estimate is based on the supposition that the breeder will really begin generating electricity in 1986--which is by no means certain, according to the experts.

By mid-January, in a private session of the research committee von Buelow was already complaining that the nuclear engineers in Kalkar were limping along 6 months behind the accepted timetable. Now the last partial construction permit, actually planned for December 1981, will be granted only in the summer at the earliest.

that each month of longer construction time costs millions extra. Moreover it is to be expected that the final, all-important license will be granted only with the imposition of expensive requirements.

But the research minister must not count on even these 5 billion marks as an assured sum. Because the electricity industry wants to make its financing contribution of 1.1 billion marks contingent only on certain conditions.

The most important: The enterprises will pay only if the parliament sets aside its reservation with respect to the breeder and does not raise any objections to its operation.

But for that to happen, first it would be necessary, among other things, to have on hand the report about the possible dangers of breeder technology which is being drawn up by the Inquiry Commission of the Bundestag. But even if all the needed votes were to go in favor of the breeder, the parliament could not make a decision before September. However, von Buelow needs money right away if costly construction interruptions at Kalkar are to be avoided.

As (1981) in his first cabinet proposal he had written straightforwardly that the finance minister might like to allow him immediate access to monies which are intended for later phases of construction. The sums in question amount to 40 million marks.

But von Buelow will not receive this blank check. On Tuesday of last week, Mittermaier sent his state secretary, Guenter Obert, to the top-level discussion at the research ministry. The full power of attorney by way of which the government was supposed to commit itself to undertake the payment of these millions disappeared from the cabinet proposal.

Now von Buelow must haggle with the finance minister over each individual contract and get approval for the respective sum. The finance minister wants to examine closely whether such amounts are really at the point of being "urgently" payable.

The bulk of this sum is not supposed to appear until in May, in a supplementary budget. But at that time the members of parliament, whom von Buelow merely must notify, will really have a say in the matter.

Another condition made by the electricity industry could likewise bring further trouble to the research minister: These enterprises are demanding that in any case they be allowed to pass on their contribution to the breeder by charging increased electricity rates.

That will be difficult. To be sure, on the basis of a decision by the economic committee the enterprises may increase the rates for small customers at any time in 1981 at Kalkar. But things are different with the privately agreed-upon contract with the large-scale purchasers from industry. Thus, for example, Maxhütte in Sulzbach is not likely to voluntarily pay an extra charge on its electricity bill to the Eastern Bavarian Power Supply Company AG in Regensburg. This is understandable, since apart from this Maxhütte has sustained losses for three years.

The city of Schweinfurt will balk as well. It would have to ask its residents to pay higher electricity rates so that the research reactor in Kalkar can be built, while at the same time it is carrying on a lawsuit with the taxes of the same residents against the less controversial nuclear power plant of Grafenrheinfeld.

But if such electricity customers should refuse to pay a breeder surcharge, Bayernwerk would have a pretext for withdrawing its promise of 71 million marks. Then however, the promises of all the electricity firms would be null and void. That is to say, one condition is that all the power supply companies accept their share of the breeder burden.

Up to now anyway, the research minister has not achieved this goal. It is still not certain how he can bind the many small electricity firms to their contribution by September. The research minister has had problems even with large enterprises, such as the Hamburg Electricity Works (HEW), which in addition is considerably influenced still by his fellow party member, Hamburg mayor Klaus von Dohnanyi.

To be sure, von Buelow announced last week that now he finally had the certain promise of the HEW for 52 million marks. But so far there is only a policy signal by the mayor and a reluctantly affirmative resolution on principle by the HEW board of directors. There is still arguing over the details.

Von Dohnanyi had taken long enough with his signal to Bonn--for good reason. He can hardly explain to his constituents that the HEW is backing out of the Brokdorf nuclear power plant at the same time that he is wringing from this enterprise a contribution of millions for breeder technology.

The way out found by von Dohnanyi and von Buelow does not seem very convincing. The aristocratic associates agreed that what those in Hamburg are doing is putting up their millions for the less controversial high-temperature reactor and for coal research. Thereupon 52 million marks which previously had been committed in his budget for this purpose can be disengaged by von Buelow for the breeder.

The research minister has been laboring to cajole the United Electricity Works of Westphalia (VEW) by means of similar ploys. Since the Westphalians also think more highly of the high-temperature reactor, they as well are not paying directly for the breeder. But through a book transfer, the VEW's 120 million marks will eventually be for the benefit of the reactor in Kalkar after all.

Moreover, the Dortmund residents have devised an original means of payment for a portion of their contribution. The research minister had promised this enterprise a subsidy of 66 million marks for the construction of a coal high-pressure gasification plant. Now they want to forgo this.

This apparently generous gesture leads one to suspect that the subvention probably was superfluous--that the VEW would have been able to build its gasification plant even without the governmental subsidy which it is now sacrificing to the breeder.

CHANGE IN NUCLEAR PLANT PERMIT PROCEDURE DRAFTED

Hamburg DER SPIEGEL in German 1 Mar 82 pp 50, 53

[Text] The Bundesrat will decide this week how approval procedures for nuclear power plants can be speeded up in the future--to the detriment of the citizens and the courts.

Bavarian State Secretary Anton Jaumann (CSU) hopes that "the trust of the electricity industry in the state" will be strengthened. Minister of Economics Otto Graf Lambsdorff (FDP) sees the opportunity "to make" the investment risk for the operators, manufacturers and suppliers of nuclear power plants "calculable again."

Both ministers have reason to view the future a little more brightly: Very quietly, a grand coalition made up of the state, the Laender and the nuclear industry has been preparing a radical change in the legal process for nuclear approval.

The pact is to be sealed on Thursday of this week by the presidents of the Laender and on Friday by the Bundesrat. If the Bundesrat agrees, the Minister of the Interior will put into effect the "First Statute to Change the Nuclear Procedural Regulations," as provided for in the nuclear law.

Everything in the wording of the old statute has been snipped away that supposedly stands in the way of the more rapid construction of nuclear power plants and disposal facilities: The opportunities for citizens to object have been curtailed and this had made it more difficult for the courts to make inspections.

According to the wording that has been in effect until now, applications to make changes and partial approvals for builders of nuclear power plants do not have to be published separately and discussed in public only if "a new announcement and explanation would not reveal new circumstances which may be of importance for the interests of third parties."

For a long time the authorities granting approvals in the Laender have not always adhered to this principle. But it has been established practice to interpret the wording in favor of the citizen in cases of doubt, at the very latest following a decision by the Constitutional Court concerning the Muelheim-Kaerlich nuclear power plant in the Rhineland Palatinate.

In January 1980 the judges decided that the basic right to life and physical good health required participation in the process by citizens in the event of later partial petitions and requests for changes. This held true particularly when citizens could not be adequately informed at the beginning of the procedure--citizens' participation in all crucial phases of the procedure is the rule.

After the ruling even the electricity industry association saw the light. "The public must always participate," they wrote, "in approving changes."

In the rewritten section 4 of the Nuclear Procedural Regulations the rule becomes the exception: In case of doubt, no.

It is stated in the new version that in future it is sufficient for the approval-granting authority just to be convinced--which can hardly be checked--for changes to be put through without citizens' participation. The text reads:

If the project is changed substantially during the approval procedure, the approving authority may ignore an additional announcement and explanation if no circumstances are revealed in the safety report which give rise to concern about harmful effects and danger to third parties.

If the authority has no objection, which will be the rule, very special circumstances have to arise to make an explanation possible. According to the amendment, only in five cases is "an additional announcement and explanation... required," for example, in the event of "an increase in thermal output."

The nuclear power industry, which has been trying for years to recruit the state and the Laender for a less broad procedural law for approving nuclear power plants, will celebrate this as a success. What is now proceeding at a snail's pace will finally run more smoothly: The completion of 10 nuclear power plants under construction and 9 that are planned in the FRG.

The industry often puts the blame for the delays on the opponents of nuclear power. But citizens' objections only rarely delayed the construction of a nuclear power plant. The often quoted example of Wyhl, where the Administrative Court in Freiburg has suspended continuation of construction because of a missing blast shield since 1977, is an exception. Mostly, construction is slowed down because untested technology constantly requires time-consuming repairs.

At the beginning of 1981, the Ministry of the Interior requested the cooperation of the Land ministries responsible for approving nuclear power plants and of the plant builders in drafting the amendment. The pressure from the Laender has been growing ever since. In October last year the Minister of Justice for Baden-Wuerttemberg, Hans Eyrich, sent the "draft of a Third Law to change the Administrative Court rules" to his colleagues in the other Laender.

The paper picks up a proposal that was discussed years ago and seemed to be long since dispensed with: In legal disputes about the "construction,

operation and alteration of nuclear power plants," airports, freeways and similar large-scale projects, the authority for the first appeal should not rest with an Administrative Court but directly with the Superior Court--one court of appeal less to review the facts. Eyrich wrote: "Only in this way" can the "duration of the proceedings" be made "tangibly shorter" and "a maximum of legal uniformity" be achieved.

That is quite consistent. Nuclear power plant constructors and the approval-granting authorities in Baden-Wuerttemberg have thought of a few tricks not to allow the Swabians to learn too much. They avoid publication and public discussion of substantive changes in the construction of a nuclear power plant by declaring such changes to be "anticipated repairs"--they do not have to be announced publicly.

It is anyone's guess what happens on a nuclear power plant construction site. The reactor pressure vessel in the fast breeder in Kalkar has been rusting away for years--so now its steel walls are being ground down by 2 millimeters. This does not meet the wall thickness of 40 millimeters laid down in the safety report.

No one knows what the consequences will be. The only thing certain is that approval will be given this summer to install the colossus without renewed public participation.

The president of Lower Saxony, Ernst Albrecht, is making the most recent and possibly the most serious thrust in the matter of nuclear law. In preparation for the presidents' conference this week he sent an "advisory draft" to the other 10 Land and Senate chancelleries. In it he asks his colleagues to consider some so-called clarifying changes in the law:

--If an approving authority determines that a nuclear power plant design conforms to the requisite state of science and technology, this determination should in the future be "reviewable by the court only to a limited extent"--translated, that means: The courts should be kept out.

--it must be written "expressly" into the nuclear law "that the intermediate storage of irradiated fuel rods is also permitted inside nuclear power plants as a method of disposal under the nuclear law"--translated: What is not disposal at all is to be considered disposal.

--it must also be written into the nuclear law "that mining exploration of subterranean formations with a view to their suitability as a storage site for radioactive materials does not require permission under the nuclear law, and this will only be required if the basis of the exploration is to be used for the removal of radioactive waste"--translated: Drill first, then see what happens.

The head of government himself now confirms what an official of the approval authority in Lower Saxony urged members of the Physical-Technical Institute in Braunschweig in the summer of 1980, during an Intercity train journey between Hannover and Bonn: At the test drillings in Gorleben the shaft

should be made 7.5 meters wide straight away. That was more practical, he said, because that much would be needed later to deposit waste from the reactor.

When the nuclear power plant lobby thinks it is alone, it is sometimes very open. When the amendment to the Statute on Nuclear Procedures was being discussed in the Laender committee session on nuclear energy in July 1981, Dieter Mumm, departmental head in the Ministry for Social Affairs in Schleswig-Holstein, was openly applauded. Mumm had declared: "We have all come here to clip the wings of the Superior Administrative Court in Lueneburg. The judges there had decided in favor of the citizen plaintiffs in several nuclear power plant rulings.

The chairman in this session was assistant secretary Josef Pfaffelhuber from the Ministry of the Interior. Since the CSU man and friend of nuclear power was conducting the amendment negotiations for Baum, the atmosphere was relaxed. "We do not need to be," one participant described the climate, "as concerned with the citizen as we were under Pfaffelhuber's predecessors."

9581

CSO: 5100/2112

REPROCESSING PLANT PLANNED FOR BAVARIA

Frankfurt/Main FRANKFURTER ALLGEMEINE in German 19 Feb 82 p 6

[Article by Fin: "Reprocessing Facility for Bavaria? Study of 11 Potential Sites; Schwandorf Preferred"]

[Text] Munich, 18 Feb--A facility will be constructed in Upper Palatinate, southeast of Schwandorf, which will make it possible to retrieve uranium and plutonium from the material burned in nuclear power plants. On Thursday the German Association for Reprocessing of Nuclear Fuels applied for a site planning license at the appropriate supervisory authority, the "government of Upper Palatinate in Regensburg. At almost the same moment Bavarian Environmental Minister Dick revealed the site selection to two committees in the Land diet. Although known for a long time, the site has up to now been treated as a state secret by the Bavarian government, which was meant to calm the population but which in fact resulted more in the opposite.

The private association expects that it will be about 10 years before the plant will begin operation. The site planning procedure alone will probably take 2 years. Two expansion levels are planned, whereby the capacity of the total facility is said to be 700 tons of uranium. Since about 2,500 persons will be employed at the construction site and 2,800 persons in the completed reprocessing facility, Minister Dick did not neglect to remind some stubborn delegates of the employment-political importance of locating such a large enterprise in an area which is extremely weak structurally. "Two thousand employees," he said, "that isn't small potatoes, after all."

The sites now under close study for their suitability belong to the Teublitz, Steinberg and Wackersdorf municipalities. This "location zone" is one of a total of 11 considered suitable by the Bavarian Environmental Ministry. Dick is extraordinarily proud of the selection method used for this, and the opposition did also grant that his ministry had made "great efforts." "The determination of suitable site zones," Dick said, "was done with the method of remaining area analysis." In its essential parts the minister's report became a slide lecture: Various slides were superimposed, on which the Bavarian regions which were described as basically unsuitable, each time from a different viewpoint, were shown in red, so that finally the 11 areas, about which there were no doubts in any respect, showed up in bright white on the screen.

In Dick's opinion the following argues in favor of construction at Schwandorf: The facility would be located in a sparsely populated region and yet near a "central town," that is to say Schwandorf. To be sure, it does not rain or snow here especially rarely but also not particularly frequently. The ground is reasonably even. Troop exercise areas and control zones around airports are located elsewhere. The area also has not yet been elevated to a wildlife reserve or national park. According to experience there are never any earthquakes. The rivers Naab and Regen serve as "intermediate low-water drainage," which the Bavarian government, in contrast to the Federal Government, considers important. Agriculture would suffer no great damage, and the forest industry, on the other hand, would get to sell lumber. The groundwater of the Bodenseehrer dell, which is of "greater than local importance," seems to be the only delicate point.

However, Dick made Bavaria's final willingness to allow the operation of the reprocessing plant dependent "on the establishment of a final storage site in a salt dome."

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BRIEFS

GREENS PROTEST FAST BREEDER--Duesseldorf, 25 Feb--The Greens and other groups opposing nuclear power are planning a series of actions this year against the continued construction and completion of the first experimental fast breeder plutonium reactor (SNR 300) in Kalkar on the Lower Rhine. They are distributing so-called statements of willingness, in which the paying customers pledge themselves by their signature to withhold from the Rheinisch-Westfaelisch Electricity Works (RWE) in Essen the last electricity rate increase of 7.2 percent, where it is being justified by the increased costs of financing for the program in Kalkar. The campaign is being run under the general heading of "Strobo," for partial electricity payment boycott. The amounts deducted from the electricity bills are to be collected in a central account belonging to the Greens. Supposedly the money is to be invested for the "use of non-polluting energy." The actions began this week under names like "Project Nuclear Pfernig" and "Kalkar Groschen." The next step planned is the formation of so-called "Strobogroups," which are to make preparations for a number of events. According to this plan, a nationwide demonstration is scheduled for this summer in Kalkar or Bonn. Additional actions are described as "warning vigils." Finally, consideration is being given to introducing a referendum against the fast breeder in the Land government in Duesseldorf. The last big demonstration, organized on a nation-wide scale, against the fast breeder reactor took place in September 1977. About 35,000 demonstrators gathered in Kalkar. The police prevented violence by searching many thousands of opponents of nuclear energy before they joined the demonstration in buses and other vehicles. More than 8,000 weapons and weapon-like objects were confiscated in the search. [Text] [Frankfurt/Main FRANKFURTER ALLGEMEINE in German 26 Feb 82 p 4] 9581

NEW NUCLEAR POWER PLANTS--Bonn Thursday, 11 Feb 82--For the first time in four and a half years new nuclear power plant construction may again be initiated in the FRG. In the Bundestag debate on the position regarding nuclear waste disposal, Federal Minister of the Interior Gerhart Baum on Thursday announced that he would give the "green light" for a total of three nuclear power plants, with a combined capacity of nearly 4,000 megawatt (MW), to be granted the first partial construction permit (TEG). The plants in question are the identically designed Isar II at Bavarian Ohu (1,350 MW), Biblis C in Hesse (1,300 MW) and Lingen on the Ems in Lower Saxony (1,301 MW), which are equipped with pressurized water reactors by Kraftwerk Union Inc. The last time a first partial construction permit was granted was on 6 July 1977 to the Philippsburg II nuclear plant on the Rhine. [Text] [Duesseldorf HANDELSBLATT in German 12/13 Feb 82 p 1]

BREAKDOWNS CAUSE HALTING OF THREE NUCLEAR PLANTS

Stockholm DAGENS NYHETER in Swedish 22 Feb 82 p 6

[Article by Bo Ostlund: "Three Reactors Out of Service"]

[Text] The 1981-82 winter will cause just as unexpected as expensive setbacks for the Swedish nuclear power industry: Right now--when they are needed the most--three reactors are broken down, a fourth runs the risk of being delayed and in addition the research reactor at Studsvik is damaged.

"We were spoiled for a while with a totally problem-free power production," says director-general Lars Nordstrom at the National Nuclear Energy Inspection, SKI.

This is the situation today:

Ringhals 3 has been quiet since this fall; something is wrong with the steam generator.

Ringhals 4, which is of the same design, must also be rebuilt for the same reason, before it can be loaded and started up. Risk for delays.

One of the reactors at Barseback, B 1, is down. A shaft in the generator must be repaired.

One of Oskarshamn's two reactors, O 1, is down after an oil fire in the generator last week.

The Studsvik research reactor is out of service.

Six reactors are now operating instead of nine. Those which are now operating at capacity in the stubborn winter cold are Forsmark 1 and Forsmark 2, Oskarshamn 2 and Barseback 2, Ringhals 1 and 2.

This means that the Swedish-built, oldest boiling-water reactors are the ones operating; the pressurized water reactors at Ringhals are down, and this is a picture recognized by the SKI:

"The pattern is repeated all over the world," Lars Nordstrom says. "Reports are surfacing everywhere indicating that the pressurized water reactors have problems."

On Monday the SKI had personnel at the Oskarshamn Nuclear Power Plant and at Ringhals. Today, Tuesday, they are back in Stockholm to submit their reports.

Not until then will it be possible to say anything about when the broken reactors could come on line again.

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WESTINGHOUSE-BUILT RINGHALS 3 TO BE OUT OF SERVICE TILL 1983

Stockholm SVENSKA DAGBLADET in Swedish 17 Feb 82 p 6

[Article by Margareta Artsman: 'Nearly 2 Years' Rest for Ringhals 3; Peak Capacity not Until '83']

[Text] Varberg--Ringhals 3, which has been shut down since 19 October last year, will probably not be back on line at peak capacity until perhaps the fall of 1983, that is to say in $1\frac{1}{2}$ years.

This was revealed when the National Nuclear Inspection Agency, SKI, Ringhals Nuclear Power Plant and the Waterfall Agency met with the local safety commission in Varberg on Monday. At the same time, the issue was brought up of why information from Westinghouse regarding changes, discovered in tubes at Ringhals 3, was not brought to the attention of the Waterfall Agency until December.

"This is the most important issue," says Allan Hyden, Varberg, chairman of the local safety commission. "Why was this information held back?"

Reactor inspector Frigyes Reich from the SKI also expressed criticism. The Waterfall Agency should have asked where the report was, he says. And one could then have suspected damage as early as June. Now, it took another 3 months until the damage at Ringhals was discovered, with serious consequences.

It was in May last year, while Ringhals was undergoing a test run, that the reactor was hit by so-called water hammer. The suppliers then demanded that the steam generators should be examined, which was done by the U.S. firm of Zetec. A taped report to Westinghouse was accompanied by a two-page handwritten paper with the recommendation that seven tubes should be looked at.

But this recommendation never reached the Waterfall Agency. Not until November did the Waterfall Agency begin to ask why one had not gotten any results from the measurements in May, says Bertil Agrenius, project leader for Ringhals 3 and 4. In the report we received first there was nothing about having seen mechanical changes.

"It is very grave that Westinghouse now maintains that the report has disappeared in the bureaucracy," says Frigyes Reich at SKI.

According to information chief Goran Manderus at SKI, in the future one wants to get Swedish experts to do technical investigations of this kind.

But there is no reason to suspect that Westinghouse has concealed any paper, the plant manager at Ringhals, Evert Ericson, says. "We simply believe that an employee at Westinghouse did not judge the paper so important that it needed to be sent to the Waterfall Agency."

Model Test

What is now happening to Ringhals 3 is that model tests are being done at Alvkärleby in order to find a safe output level, so that abrasion damage will not occur and so that one can start up with reduced output.

These tests are not yet complete. One might get an answer in a few weeks, and then the SKI will have to approve it.

Furthermore, Westinghouse is working at full speed to reach a permanent solution, and that means that four important demands by the SKI must be met. One wants to have foreign operational experience available and in the future never again be a "guinea pig." There is also a facility in Almaraz in Spain which will function as such. It is 1,000 hours ahead of Ringhals.

In addition, the model tests at Alvkärleby are to be completed, and special safety precautions are demanded which give warning long in advance, so that the personnel is able to shut down the reactor before any damage has occurred, and finally less stress and better anchoring of the pipes is demanded.

Before the permanent solution for Ringhals 3 is presented, it will also be tested in a U.S. reactor.

It might also become necessary to test operate Ringhals 4 with reduced effect for about 2 months. Applications for this will be submitted by the Waterfall Agency. Number four was actually to be loaded on 1 April for final delivery in November 1982.

Reports that the Ringhals shutdown is costing 2 million a day are denied by the Waterfall Agency. The actual cost can now be calculated at something under 1 million a day. But what it will be in the future hinges entirely on the oil dependence and on the supply of hydroelectric power, the Waterfall Agency says.

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SWEDEN

RINGHALS 3 PLANT RESTARTS OPERATION AFTER BREAKDOWN

Stockholm DAGENS NYHETER in Swedish 13 Mar 82 p 5

[Article by Ingvar Andersson: "Ringhals 3--Damaged Reactor To Operate"]

[Text] The damaged nuclear reactor Ringhals 3 will start in several weeks. This was approved now that SKI [Swedish Atomic Energy Board] has prescribed the requirements which Vattenfall must meet in order to get the reactor in operation.

"They should be able to meet the conditions in a few weeks," said reactor inspector Frigyes Reisch of SKI. Reisch is conducting the SKI dealings concerning the Ringhals 3 breakdown.

Also Ringhals 4--brand new sister reactor to Ringhals 3--is going to be started in a few weeks. Ringhals 4 has the same structural defect which caused the damage at Ringhals 3.

Broken Tubes

The main requirement before starting Ringhals 3 is that the reactor will only be operated at a maximum of 40 percent of power for a maximum of 1500 hours. For Ringhals 4 there will be a slow increase in power up to a maximum of 20 percent for a maximum of 3 months.

This operating level in Ringhals 4 will give no higher radioactivity in the steam generators than will make it relatively risk-free to carry out changes and repairs after the test operation.

In Ringhals 3 between 30 and 50 broken tubes in the steam generator will be plugged. Also a number of measuring instruments will be mounted in the reactor and a special type of plug used which will prevent leakage from causing serious damage.

When the test periods of 1500 hours for Ringhals 3 and 3 months for Ringhals 4 are over, new investigations will be conducted. Then it will be time for

what SKI calls the "final solution"--meaning the model which will be chosen for the continued operation of the reactors.

Previously three alternatives have been suggested:

1. Rebuild the steam generators.
2. Replace the steam generators.
3. Plug the steam generators.

"Probably it will be a matter of plugging the generators and bringing in the feed water at both the top and the bottom of the generators," said Frigyes Reisch. "This will limit the power of the reactor to perhaps 70-80 percent of full capacity."

Will Not Last

"The 'final solution' which we are now working on means that the reactors will never come up to full power.

"But on sight I do not believe in this model," continued Reisch. "The steam generators are never going to last the 25 years that the reactors are going to be in operation.

"They will probably break down long before, and then it will be necessary to rebuild or replace them.

"There is rust damage or vibration damage in all the steam generators in pressure water reactors in the world," continued Reisch. "It is probable that these must all be rebuilt long before the reactors are worn out.

"Probably several hundred reactors must be changed within perhaps 10-15 years," said Reisch.

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SWEDEN

NUCLEAR SAFETY AGENCY DEMANDS EXPLANATION FROM WESTINGHOUSE

Stockholm DAGENS NYHETER in Swedish 19 Mar 82 p 12

[Article by Peter Sandberg, DN correspondent in Goteborg: "Safety Agency Acts--Answer Demanded From Westinghouse on Ringhals"]

[Text] "We desire a clarification from Westinghouse about what model tests, full scale tests and other tests were carried out on the steam generators delivered to Ringhals 2, 3 and 4 before the offer and before delivery." That is one of the questions which the local safety agency at Ringhals asked in a letter to Westinghouse.

In every "nuclear power community" there is a local safety agency. Its job is, among other things, to follow the safety work, keep the public informed about it and about the preparations for nuclear accidents.

According to law the proprietor of a nuclear power plant must also give the local safety agency the information they think they need.

After the accident in the steam generator at Ringhals 3, when it was publicized that there were serious construction faults, the local safety agency was informed by, among others, Erik Olderin, managing director for Westinghouse in Sweden.

"It feels a little foolish to be asking people if they know which way to flee in case of an accident, when one can read in the press about serious construction faults," said the chairman of the agency, Allan Hyden.

Best Solution?

The local safety agency was not particularly satisfied with the answers given on that occasion and they agreed to formulate questions to Westinghouse in writing.

In brief, this is what the agency wants answers to:

SWEDEN

DESPITE CONSTRUCTION FAULT, RINGHALS 4 TO BE FUELED

Stockholm DAGENS NYHETER in Swedish 19 Mar 82 p 12

[Article by Bobi Sourander: "Despite Faulty Construction, Vattenfall Will Fuel Ringhals 4"]

[Text] Vattenfall received permission on Thursday to test operate nuclear power plant Ringhals 4, although it is known that the plant's steam generator has construction faults. It is not expected that the test operation will complicate the necessary rebuilding of the generators. Ringhals 4 will be Sweden's tenth active nuclear reactor.

The Atomic Energy Board [SKI] granted permission for fueling of Ringhals 4 at its meeting on Thursday.

"We have approved fueling and test operation with a maximum of 20 percent of total power," said Goran Mandeus at SKI. "The permission is effective from 1 April to 31 July."

Construction of Ringhals 4 is completed, but it has not yet been fueled with nuclear fuel. The unit is the same type as Ringhals 3, manufactured by Westinghouse, which had an emergency stop because of damage in the steam generators. It is also known that Ringhals 4 will be damaged in the same way if it is operated at full power. The steam generators in both units must be rebuilt.

"What we have approved is 'breaking in' the entire unit. Both SKI and the Institute of Radiation Protection [SSI] agree that such test operation will not lead to troublesome radiation in the parts which will be rebuilt.

Tested in the United States

According to Vattenfall, Westinghouse has made a first suggestion for rebuilding the steam generators.

"The installation will be tested in full scale at our laboratory in Alvkarleby," said Ole Blomqvist at Vattenfall. "Thereafter it will be

During the entire construction of the plant on Varohalvon, there was a striving that the installation should be built with "best possible techniques." Have economic conditions in the United States forced cheaper and thereby worse construction in the steam generators? Is there any nuclear power plant of the Ringhals 3 type which functions? Do the steam generators at Ringhals 1, 2 and 3 need to be replaced within the not too remote future?

If the steam generators are not made with the best possible techniques, are there other components which are not so either?

Why Burst?

The steam generator in Ringhals 2 has had tubes burst because of corrosion or vibration or a combination of the two. Have you any clear explanation as to why the tubes burst? If so, what is it? This has been described as an aging problem, are there any quick technical actions that are required to prevent it from getting worse?

Vattenfall will start Ringhals 3 and 4 despite the fact that this will put radioactivity in the steam generators so that the work of rebuilding them will be made more difficult or impossible. When does Westinghouse believe it will have the competence to carry out a final solution to the problem?

Information has been received about a report from the firm Zatec which contained information which could have prevented the incident in October if Vattenfall had been informed. How was that report handled and what was in it?

Authority

It is understood that Westinghouse offered and delivered a construction of steam generator which was not tested. What tests were accomplished before the offer and the delivery of the construction?

The safety agency concluded its letter with a hope for a prompt reply.

"When the safety agency was established I wondered what contribution we could make as laymen in such a complicated situation. Then I was amazed when I realized what oversight we could have, and I now believe that we have an important task. We can ask questions with more authority and bring out documentation in cooperation with the public and the mass media," said Allan Hyden.

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tested at installations in the United States. Some time this fall we will know if it is satisfactory."

Vattenfall can therefore save time while waiting by fueling, operating and adjusting Ringhals 4. It is also expected that the damaged Ringhals 3 will commence operation fairly soon.

"We have applied to SKI to operate Ringhals 3 with a maximum of 40 percent power for 1500 hours. That can be done without risk, in spite of the unit's damaged generators."

Four With Faulty Construction

On Monday experts from four nuclear plants with faulty construction will assemble at Ringhals 3. They are technicians from the reactors at Almaraz in Spain, McGuire in the United States, Angra in Brazil and Ringhals, who will go through their common gloomy experiences with the Westinghouse units. The group will also visit Alvkärleby to look at the full scale test of a steam generator there. They will probably also try to agree on a joint position on the compensation expected from Westinghouse.

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SWEDEN

BRIEFS

INTERNATIONAL NUCLEAR SAFETY COURSE--On Thursday the government gave the green light to an international project for nuclear safety. Nine nuclear power countries will participate in the project, which will begin in the fall at the Marviken installation outside Norrkoping. The aim is to find out what happens with a meltdown in a nuclear reactor. The project will cost 40 million kronor and will take several years. Participants are Sweden, United States, Canada, Finland, France, Italy, Holland, Switzerland and England. The Atomic Energy Board and Studsvik Energiteknik are the Swedish participants. No radioactivity will be involved in the Marviken tests. Everything will be simulated so that it can be seen if the reactor safety system prevents the spread of radioactivity. The Marviken installation is an unsuccessful nuclear reactor which can only be used for tests. The turbine and generator can produce electric power, however, with the help of fuel oil. [Text] [Stockholm DAGENS NYHETER in Swedish 19 Mar 82 p 12] 9287

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LOW LEVEL NUCLEAR WASTE STORAGE EXAMINED

Zurich NEUE ZUERCHER ZEITUNG in German 17 Feb 82 p 21

[Article by rr: "Final Storage of Low-Level Radioactive Waste; Domestic Storage as an Alternative to Dumping It Into the Ocean?"]

[Text] Wuerenlingen, 15 Feb--By the end of 1981 Switzerland had shipped about 6,700 drums of low-level radioactive waste to a dumping site supervised by the OECD in the North Atlantic. Only a single kilogram was radioactive material, the rest packaging. In 1982 another 800 cubic meters are due to reach the final storage site at a depth of 4,000 meters, for which it is calculated that more than three-fourths of the low-level radioactive material contained there will decay into a non-radioactive state within a human lifespan. In Wuerenlingen on Monday representatives of the National Association for Storage of Radioactive Waste (Nagra) and the Federal Institute for Reactor Research (EIR) met to learn about work and studies connected with this and also concerning the search for final storage possibilities in Switzerland.

Processing in Wuerenlingen

About 60 to 70 percent of the low-level radioactive waste in Switzerland is produced by nuclear power plants; the remaining fraction is divided between the EIR itself and other research, technology and medicine. A maximum surface radiation (200 mrem/h) and a certain maximum concentration are characteristic of this grade, which requires not only special final storage, but its own method of preparation.

At the EIR, the Waste Department with about a dozen experts will take over the practical processing. The material which does not arrive already processed at Wuerenlingen is sorted into combustible and noncombustible material. The combustible radioactive waste goes to the furnaces, which burn about 30 tons of material annually. The ashes are then poured into drums together with concrete, and the same happens to the noncombustible materials. It goes without saying that this treatment of radioactive substances, the solidification, takes place with quite complicated control systems and with strict safety precautions. In summer the new facility will begin operation which will permit advanced mechanization. At the press orientation the cost of its construction was indicated as approximately 1.5 million francs.

The surface of the containers, which have been cemented shut, is tested with a Geiger counter for radiation intensity, and later as well, when the heavy casks are transported by freight train and ship in the direction of the North Atlantic, the firms and organizations to which they are entrusted have the right to subject the goods to constant control and to refuse highly radioactive shipments.

Swiss Contributions on the Subject of Ocean Storage

According to Werner Hunzinger, head of the Radiation Protection section at the Federal Health Office, storage on the bottom of the sea offers a sufficient guarantee of safety. The materials would have lost their radioactivity when they reached the water layers near the surface, he said. Hunzinger also made it known that in this connection a five-point program by the nuclear energy agency of the OECD deals with the following areas of study: physical oceanography, geochemistry, biology, transport models and radiological control. One of the more than 40 projects is carried out by oceanographer Francois Nyffeler, Biel, and concerns studies of suspended particulates. This is a study primarily of excretions and remains of marine life in the submersion area, in the context of the stored radioactive materials on the one hand and the human food chain on the other. Several advanced technical institutes participate in this work, which is financed by Nagra.

Rudolf Rometsch, president of Nagra, described the ocean as a suitable "natural waste can," and by that he meant that nature deposits wastes in the ocean. Otherwise, people at Nagra only reluctantly speak of "nuclear waste" and "waste can," because one is responsible for exact details of the waste disposal and one is coping with "well-defined wastes." The shift, explained by Rometsch at the press meeting, from storage under control to final storage is to blame for the intensified occupation with waste disposal and storage problems, with stricter safety regulations and finally for the immense "packaging tonnages"--a shift, which in the words of the president of Nagra is less conditioned by technology than by environmental policy.

Nuclear Waste Disposal as Research Project

Aside from the practical processing work about 50 employees of the EIR deal with the "Nuclear Waste Disposal" research project, which is partly financed by Nagra and supported with personnel. According to Max Brey, deputy director of the EIR, materials for solidifying and packaging radioactive wastes, the possibilities of storing radioactive materials in rock, groundwater circulation and other subjects are under study. On Monday in Wuerenlingen the media representatives were thus able to get a quick look at tests of the sulfate resistance of concrete over a (simulated) long period, at corrosion studies and at leach tests.

Final Storage in Switzerland?

Several regions in Switzerland are potential sites for final storage of low-level radioactive wastes, according to Nagra manager Hans Issler. Test drillings are to be made in some of them. In the 1990's the construction of such a domestic final storage site would come into question. Suitable rocks for storage are, in addition to granite and gneiss, marl and limestone, clay and anhydrite covered by watertight materials.

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TURKEY

BRIEFS

BLACK SEA URANIUM DEPOSITS--Ankara (HURRIYET)--There is important news from the Black Sea. Turkish experts, like the Germans, have established the presence of uranium deposits in the Black Sea. The deposits are under the sea 12-15 nautical miles offshore in Turkish territorial and international waters along the Sinop-Giresun line. Authorities say the discovery of uranium in the Black Sea, a raw material so important to nuclear energy, the manufacture of weapons and to the atomic bomb, is a very important event for Turkey. West Germany has proposed that the uranium deposits be drawn to places where they could be processed within Turkish territorial waters. As talks and contacts are being carried out at a high level and as the possibilities of exploiting such a strategically important substance are being examined, efforts in this direction are being kept secret. It has been learned that the Soviet Union is aware of the presence of uranium deposits in the Black Sea. It is also known that West Germany wishes to exploit these deposits. It is believed that as things develop the Soviet Union may propose a partnership with Turkey. The processing of the uranium deposits now lying under the sea necessitates a highly complicated technology. This technology is available only in the United States, the Soviet Union, France, Germany and Japan. Apart from the deposits in the Black Sea, there are also other important deposits in Turkey. The ore-beds which can be seen and those which are believed to exist are estimated to involve 3,269 tons. [by Bulent Erandac] [Text] [NC160931 Istanbul HURRIYET in Turkish 13 Mar 82 p 3]

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